

## A PRELIMINARY REVISION OF ARACEAE OF CHINA\*

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**Abstract** In this revision, 204 species and 16 varieties of Chinese native aroids (Araceae) are included based on the aroid studies in the last 20 years. The geographical distribution of Chinese aroids is also presented. There are 108 species and 10 varieties endemic to China, i. e. the Chinese aroids endemism reaches as high as 53.6%. The high endemism in Araceae indicates a rich diversity of Chinese aroids. Altogether 93 species and 10 varieties in *Arisaema* have been recorded in China (mainly in its southwestern region), which possesses nearly 75% of the world's *Arisaema*. SW China can be regarded as the center of diversity and modern distribution of *Arisaema*.

**Key words** Araceae, revision, distribution, endemism, *Arisaema*, China.

### INTRODUCTION

In the family Araceae, there are 105 genera and about 3,000 species distributed in all parts of the world, mostly in the tropical and subtropical regions. Aroids are very important for human beings economically and ecologically. Around 50% of aroid species are used as herbal medicine by different people in the world. For instance, *Arisaema heterophyllum*, *Homalomena occulta* and *Pinellia pedatisecta* are widely used to deal with many diseases by different ethnic groups in India, Southeast Asia and China. Some are eaten by people in many countries. Taro (*Colocasia esculenta*) and *Xanthosoma* spp. provide the ethnic people in Asia - Pacific and Africa with necessary subsistence food. Most aroids such as *Anthurium* spp., *Philodendron* spp., *Alocasia* spp. and *Zantedeschia* have very much potential for ornamental purposes.

In the 1979 **Flora of China - Araceae** (namely Flora Reipublicae Popularis Sinicae Tomus 13(2), i. e. Chinese version), 206 aroid species in 28 genera were recorded (Li, 1979). However, taxonomically and biogeographically, the Chinese aroids were far from being understood. In the past 20 years, Chinese botanists have paid great attention to aroids. A preliminary revision of native Araceae of China, focusing on their enumeration and geographical distribution, is given as below.

### ENUMERATION AND GEOGRAPHICAL DISTRIBUTION

#### (1) ACORUS L\*\*.

1. *Acorus calamus* L., Sp. Pl. ed. 1: 324, 1753: All of China; cosmopolitan, < 2600m.  
var. *calamus* L.: All of China; Europe, Asia, N America;  
var. *verus* L.: Yunnan; India, Bhutan, Bangladesh, Sri Lanka.
2. *Acorus gramineus* Soland., Ait. Hort. Kew. Ed. 1: 474, 1789: Zhejiang, Jiangxi, Hubei, Hunan, Guangdong, Guangxi, Shanxi, Gansu, Sichuan, Guizhou, Yunnan, Xizang; NE India to N Thailand, < 2600m.
3. *Acorus rumphianus* S. Y. Hu in Dansk. Bot. Arkiv. 23(4): 416; Yunnan; tropical and subtropical ar-

\* New species and new varieties that appeared in the paper have been described in the Flora of China (English version).

\*\* *Acorus*, which has been separated from aroids by many botanists, is still treated as a genus in Araceae in this paper.

eas, < 1800m.

4. *Acorus tatarinowii* Schott in Oesterr. Bot. Zeischr. 9: 101, 1859 (*A. xiangyeus* Z. Y. Zhu, *A. macrospadiceus* F. N. Wei et Y. K. Li, *A. brevispathus* K. M. Liu): Shandong, Jiangsu, Anhui, Zhejiang, Jiangxi, Fujian, Taiwan, Henan, Hubei, Hunan, Guangdong, Guangxi, Guizhou, Yunnan, Xizang; Vietnam, Thailand to Java, < 1300m.

## (2) *AGLAONEMA* Schott

1. *Aglaonema modestum* Schott ex Engl. in A. de Candolle, Monogr. Phan. 2: 442, 1879; Guangdong, Guangxi, Yunnan; Vietnam, Philippines, 500 – 1700m.

2. *Aglaonema tenuipes* Engl., Bot. Tidsskr. 24: 275, 1902; Yunnan; Laos, Vietnam, 160 – 1500m.

## (3) *ALOCASIA* (Schott) G. Don.

1. *Alocasia cucullata* (Lour.) Schott in Oesterr. Bot. Wochenbl. 4: 410, 1854 (*Arum cucullatum* Lour.): Zhejiang, Fujian, Guangdong, Guangxi, Sichuan, Guizhou, Yunnan; Bangladesh, Sri Lanka, Myanmar, Thailand, < 2000m.

2. *Alocasia hainanica* N. E. Brown, Journ. Linn. Soc. Bot. 36: 183, 1903; Hainan; N Vietnam.

3. *Alocasia longiloba* Miq., Fl. Ind. Bot. 3: 207, 1855; Guangdong, Yunnan. Endemic.

4. *Alocasia odora* (Roxb.) Koch in Ind. Seem. Hot. Beryl. App. 5, 1854 (*Arum odorum* Roxb., *Alocasia macrorrhiza* Schott): Jiangxi, Fujian, Taiwan, Hunan, Guangdong, Guangxi, Sichuan, Guizhou, Yunnan; Bangladesh, Sri Lanka, Myanmar, Indo – China Pen.

## (4) *AMORPHOPHALLUS* Blume ex Decaisne

1. *Amorphophallus albus* P. Y. Liu et J. F. Chen, Journ. SW Agric. College 1: 67 – 69, 1984; Sichuan, Yunnan. Endemic.

2. *Amorphophallus arnautovii* W. Hett., Blumea 39: 245, 1994; Yunnan; Vietnam.

3. *Amorphophallus coaetaneus* S. Y. Liu et S. J. Wei, Guihaia 6(3): 183, 1986; Guangxi. Endemic.

4. *Amorphophallus corrugatus* N. E. Brown, Key Bull. 1912 (6): 269, 1912 (*A. tianyangensis* P. Y. Liu et S. L. Zhang): Guangxi, Yunnan; Thailand, Myanmar.

5. *Amorphophallus dunnii* Tutcher in Journ. Bot. 49: 273, 1911; Hunan, Guangdong, Guangxi, Yunnan, 220 – 800m. Endemic.

6. *Amorphophallus hayi* W. Hett., Blumea 39: 258, 1994; Yunnan; N Vietnam.

7. *Amorphophallus henryi* N. E. Brown in Forbes et Hemsley, Journ. Linn. Soc. Bot. 36: 181, 1903 (*A. niimurai* Yamamoto): Taiwan. Endemic, 20 – 660m.

8. *Amorphophallus hirtus* N. E. Brown in Forbes et Hemsley, Journ. Linn. Soc. Bot. 36: 181, 1903; Taiwan. Endemic.

9. *Amorphophallus kachinensis* Engl. et Gehr. in Engl. Pflanzenr. 48 (4, 23C): 91, 1911 (*A. bannaensis* H. Li): Yunnan; Laos, Myanmar, Thailand.

10. *Amorphophallus kiusianus* (Makino) Mikino, Bot. Mag. Tokyo 27: 244, 1913 (*A. sinensis* Makino): Jiangsu, Zhejiang, Jiangxi, Fujian, Hunan, Guangdong, Guizhou, Yunnan; Java, Philippines < 800m.

11. *Amorphophallus konjac* C. Koch, Wochenschr. Gartn. Pflanzenk. 1: 262, 1858 (*A. revieri* Durieu, *A. mairei* Lev.): Shandong, Jiangsu, Anhui, Zhejiang, Jiangxi, Fujian, Taiwan, Henan, Hubei, Hunan, Guangdong, Guangxi, Shanxi, Ningxia, Gansu, Sichuan, Guizhou, Yunnan, Xizang; E Himalayas to Thailand, Philippines. Widely cultivated throughout the tropics and subtropics in Asia and Pacific.

12. *Amorphophallus krausei* Engl., Pflanzenr. 48 (4, 23C): 94, 1911 (*A. krausei* H. Li): Yunnan, Myanmar, Thailand.

13. *Amorphophallus mellii* Engl., Notizbl. Bot. Gart. Berlin. 8: 187, 1922; Guangdong, Guangxi, 200 –

1000m. Endemic.

14. *Amorphophallus nanus* H. Li. et C. L. Long, Aroideana 11(1): 8–9, 1988; Yunnan. Endemic.
15. *Amorphophallus odoratus* W. Hett. et H. Li, Blumea 39: 265, 1994; Hong Kong. Endemic.
16. *Amorphophallus paeoniifolius* (Dennstaedt) Nicolson, Taxon 26(2/3): 338, 1977 (*Dracontium paeoniifolium* Dennstaedt); Guangdong, Guangxi, Yunnan; Vietnam, Thailand, Mascarene Is., <750m.
17. *Amorphophallus pingbianensis* H. Li et C. L. Long, Aroideana 11(1): 4–6, 1988; SE Yunnan; N Vietnam.
18. *Amorphophallus stipitatus* Engl., Notizbl. Bot. Gart. Berlin. 8: 457, 1923; Guangdong. Endemic.
19. *Amorphophallus tonkinensis* Engl. et Gehr. in Engl. Pflanzenr. 48 (4, 23C): 86, 1911; Yunnan, Guangxi; Vietnam.
20. *Amorphophallus yuloensis* H. Li, Journ. Wuhan. Bot. Resear. 6(3): 211–212, 1988; Yunnan; E Himalayas to Myanmar, 300–850m.
21. *Amorphophallus yunnanensis* Engl., Pflanzenr. 48 (4, 23C): 109, 1911 (*A. kerrii* N. E. Brown); Guangxi, Guizhou, Yunnan; N Thailand, 200–2000m.

#### (5) *AMYDRIMUM* Schott

1. *Amydrium hainanense* (H. Li et al.) H. Li, Fl. Reipubl. Popularis Sin. 13(2): 24, 1979 (*Epipremnopsis hainanensis* H. Li et al.); Hunan, Guangdong, Guangxi, Yunnan, <1300m. Endemic.
2. *Amydrium sinense* (Engl.) H. Li, Fl. Reipubl. Popularis Sin. 13(2): 23, 1979; Hubei, Hunan, Guangxi, Sichuan, Guizhou, Yunnan, 550–1100m. Endemic.

#### (6) *ANADENDRUM* Schott

1. *Anadendrum latifolium* Hook. f., Fl. Brit. Ind. 6: 540, 1893; Yunnan; Vietnam to Malay Pen., 100–250m.
2. *Anadendrum montanum* (Blume) Schott in Bonpl. 5: 45, 1857 (*Calla montana* Blume); Guangdong, Yunnan; Vietnam, Laos to Malay Pen., Indonesia, <500m.

#### (7) *ARISAEMA* Mart.

1. *Arisaema amurense* Maxim., Prim. Fl. Amur. 264, 1859.  
var. *amurense*: Hebei, Shanxi, Inner Mongolia, Heilongjiang, Jilin, Liaoning, Shandong, Henan, Shanxi, Ningxia; E Siberia, Korea, Japan.  
var. *serratum* Nakai: Hebei, Shanxi, Inner Mongolia, Jilin, Liaoning, Shandong, Henan, Shanxi, Ningxia. Endemic.
2. *Arisaema aridum* H. Li, Acta Phytotax. Sin. 15(2): 107, 1977; Sichuan, Yunnan, ~2250m. Endemic.
3. *Arisaema asperatum* N. E. Brown, Journ. Linn. Soc. Bot. 36: 177–, 1903; Henan, Hubei, Hunan, Shanxi, Gansu, Sichuan, 1300–2900m. Endemic.
4. *Arisaema auriculatum* Buchet in Lecomte, Not. Syst. 2(4): 123, 1920; Sichuan, Yunnan, 2300–3100m. Endemic.
5. *Arisaema austro-yunnanense* H. Li, Acta Phytotax. Sin. 15(2): 105, 1977; Yunnan, 780m. Endemic.
6. *Arisaema balansae* Engl., Pflanzenr. 73 (IV, 23F): 163, 1920; Yunnan; Vietnam, Thailand.
7. *Arisaema bannaense* H. Li, Bull. Bot. Res. Harbin 8(3): 101–102, fig. 3, 1988; Yunnan. Endemic.
8. *Arisaema bathycoleum* Hand. – Mazz, Sitzsan. AK. W. W. 61: 122, 1924; Sichuan, Yunnan, 1600–3400m. Endemic.
9. *Arisaema bockii* Engl., Bot. Jahrb. 29: 235, 1900; Anhui, Fujian, Guangdong, Guangxi, Guizhou,

- Henan, Hubei, Hunan, Jiangsu, Jiangxi, Zhejiang, 650 – 1500m. Endemic.
10. *Arisaema bogneri* P. Boyce et H. Li, sp. nov.: Yunnan, Xizang, 1500m. Endemic.
  11. *Arisaema bonatianum* Engl., Pflanzenr. 73(4, 23F): 214, 1920; Yunnan, 3000m. Endemic.
  12. *Arisaema burmaense* P. Boyce et H. Li, sp. nov.: W Yunnan; N Myanmar, 2950m.
  13. *Arisaema calcareum* H. Li, Acta Phytotax. Sin. 15(2): 106, 1977; Yunnan, 1000 – 1600m. Endemic.
  14. *Arisaema candidissimum* W. W. Smith, Not. Bot. Gart. Edinb. 10: 8, 1917; Sichuan, Yunnan, Xizang, 2700 – 3300m. Endemic.
  15. *Arisaema ciliatum* H. Li, Acta Phytotax. Sin. 15(2): 108, 1977; Yunnan, 3000m. Endemic.
  16. *Arisaema clavatum* Buchet in Lecomte, Not. Syst. 2(4): 121, 1911; Hubei, Sichuan, Guizhou, 650 – 1400m. Endemic.
  17. *Arisaema cochleatum* Stapf ex H. Li; Shanxi, 3000 – 3500m. Endemic.
  18. *Arisaema concinnum* Schott, Bonpl. 7: 27, 1859; Xizang; Himalayas to Myanmar; 2100 – 2900m.
  19. *Arisaema consanguineum* Schott, Bonpl. 7: 27, 1859; Anhui, Fujian, Gansu, Guangdong, Guangxi, Guizhou, Henan, Hubei, Hunan, Jiangxi, Shanxi, Shandong, Sichuan, Taiwan, Yunnan, Zhejiang; Bhutan, NE India, Myanmar, Nepal, N Thailand, < 2700m.
  20. *Arisaema cordatum* N. E. Brown, Journ. Linn. Soc. Bot. 36: 177, 1903; Guangdong, Guangxi. Endemic.
  21. *Arisaema costatum* (Wall.) Mart. Flora 14: 458, 1831 (*Arum costatum* Wall.): Xizang; Nepal. 2300 – 2400m.
  22. *Arisaema daihaiense* H. Li, Acta Phytotax. Sin. 15(2): 107, 1977; Yunnan. Endemic, ~ 2600m.
  23. *Arisaema decipiens* Schott, Oesterr. Bot. Zeitschr. 7: 373, 1857; Guangxi, Yunnan; NE India; 880 – 3400m.
  24. *Arisaema dilatatum* Buchet Buchet in Lecomte, Not. Syst. 1(12): 369, 1911; Sichuan, Yunnan; Bhutan, 2100 – 3350m.
  25. *Arisaema du - bois - reymondiae* Engl., Pflanzenr. 73 (4, 23F): 173, 1880; Jiangsu, Anhui, Zhejiang, Jiangxi, Fujian, Hunan, Guangdong, Shanxi, < 1800m. Endemic.
  26. *Arisaema dulongense* H. Li, Acta Bot. Yunnan. Suppl. 5: 11 – 12, 1992; Yunnan, 1400 – 1600m. Endemic.
  27. *Arisaema echinatioides* P. Boyce et H. Li, sp. nov.: Yunnan, 2900 – 3300m. Endemic.
  28. *Arisaema echinatum* (Wall.) Schott, Melet. 1: 17, 1832 (*Arum echinatum* Wall.): Yunnan, Xizang; NE India, Bhutan, Nepal, 2600 – 3200m.
  29. *Arisaema elephas* Buchet in Lecomte, Not. Syst. 1(12): 370, 1911; Sichuan, Guizhou, Yunnan, Xizang, 1800 – 4000m.  
var. *elephas* Buchet: Sichuan, Yunnan. Endemic.  
var. *jìnshaense* H. Li; Yunnan. Endemic.
  30. *Arisaema erubescens* (Wall.) Schott, Melet. 1: 17, 1832 (*Arum erubescens* Wall.): Hebei, Shanxi, Heilongjiang, Jilin, Liaoning, Shandong, Jiangsu, Anhui, Zhejiang, Jiangxi, Fujian, Taiwan, Henan, Hubei, Hunan, Guangdong, Guangxi, Shanxi, Ningxia, Gansu, Qinghai, Sichuan, Guizhou, Yunnan, Xizang; Nepal, India, Myanmar, < 3200m.
  31. *Arisaema exappendiculatum* Hara, Journ. Jap. Bot. 40: 21, 1965; Xizang; Nepal, 2400 – 2500m.
  32. *Arisaema fargesii* Buchet in Lecomte, Not. Syst. 1(12): 371, 1911; Hubei, Gansu, Sichuan, 900 – 1600m. Endemic.
  33. *Arisaema flavum* (Forsk.) Schottm, Prodr. 40, 1860 (*Arum flavum* Forsk.): Sichuan, Yunnan, Xizang; Afghanistan, India.
  34. *Arisaema formosanum* Hayata, Icon. Pl. Form. 5: 243, fig. 87, 1915.

- var. *formosanum*: Taiwan. Endemic.  
var. *stenophyllum* Hayata; Taiwan. Endemic.
35. *Arisaema franchetianum* Engl., Bot. Jahrb. 1: 487, 1881; Guangxi, Sichuan, Yunnan, Xizang, 960 – 3000m. Endemic.
36. *Arisaema galeatum* N. E. Brown, Gard. Chron. 12: 102, 1879; E Xizang; Bhutan, NE India, Myanmar, 2100m.
37. *Arisaema giganteum* G. Ruckert et H. Li, sp. nov.; W Yunnan. Endemic.
38. *Arisaema grapsospadix* Hayata, Icon. Pl. Form. 5: 244, pl. 17, 1920; Fujian, Taiwan. Endemic.
39. *Arisaema griffithii* Schott, Syn. Ar. 26, 1856.  
var. *griffithii* Schott; Xizang; Bhutan, India, Nepal, 3000 – 3850m.  
var. *verrucosum* (Schott) Hara; Yunnan; NE India, 2800 – 3700m.
40. *Arisaema hainanense* C. Y. Wu ex H. Li, R. Xiao et X. L. Zeng, Acta Phytotax. Sin. 15(2): 107, 1977; Hainan, 400 – 2100m. Endemic.
41. *Arisaema handelii* Stapf ex Hand. – Mazz, Symb. Sin. 7: 1367, 1936; NW Yunnan, 2800 – 3500m. Endemic.
42. *Arisaema heterophyllum* Blume, Rumphia 1: 10, 1835; Jilin, Liaoning, Shandong, Jiangsu, Anhui, Zhejiang, Jiangxi, Fujian, Taiwan, Hubei, Hunan, Guangdong, Guangxi, Shanxi, Sichuan, Guizhou, Yunnan; Korea, Japan, < 2700m.
43. *Arisaema hunanense* Hand. – Mazz., Symb. Sin. 7: 1365, 1936; Hunan, Guangdong, Sichuan, 200 – 750m. Endemic.
44. *Arisaema hungyaense* H. Li, Acta Phytotax. Sin. 15(2): 108, 1977; Sichuan. Endemic.
45. *Arisaema inkiangense* H. Li, Acta Phytotax. Sin. 15(2): 106, 1977.  
var. *inkiangense* H. Li; Yunnan, 380 – 1700m. Endemic.  
var. *maculatum* H. Li; Yunnan, < 1600m. Endemic.
46. *Arisaema ilanense* J. C. Wang, Bot. Bull. Acad. Sin. 37: 71 – 75, 1996; Taiwan, 1600 – 1900m. Endemic.
47. *Arisaema intermedium* Blume, Rumphia 1: 102, 1835; Yunnan, Xizang; India, Nepal, 2000 – 3400m.
48. *Arisaema jacquemontii* Blume, Rumphia 1: 95, 1835; Yunnan, Xizang; Pakistan, India, Nepal.
49. *Arisaema jingdongense* H. Li et H. Peng; Yunnan; Bhutan, India, 3000 – 4000m.
50. *Arisaema jinshajianense* H. Li; Yunnan. Endemic.
51. *Arisaema lichiangense* W. W. Smith, Not. Bot. Gard. Edinb. 8: 178, 1914; Sichuan, Yunnan, 2400 – 3000m. Endemic.
52. *Arisaema lingyunense* H. Li, Acta Phytotax. Sin. 15(2): 107, 1977; Guangxi, 1360 – 1700m. Endemic.
53. *Arisaema lobatum* Engl., Bot. Jahrb. 1: 487, 1811; Anhui, Zhejiang, Jiangxi, Hubei, Hunan, Guangxi, Shanxi, Gansu, Sichuan, Guizhou, Yunnan, 600 – 3300m. Endemic.
54. *Arisaema matsudai* Hayata, Icon. Pl. Form. 9: 149, fig. 55, 1920; Taiwan. Endemic.
55. *Arisaema meleagris* Buchet in Lecomte, Not. Syst. 2(4): 122, 1911.  
var. *meleagris* Buchet; Sichuan. Endemic.  
var. *sinuatum* (Wall.) Buchet; Sichuan, Yunnan, 2000 – 2300m. Endemic.
56. *Arisaema nantciangense* Pamp., Nuov. Giorn. Bot. Ital. 22: 261, 1915; Hubei. Endemic.
57. *Arisaema nepenthoides* (Wall.) Mart., Flora 458, 1831 (*Arum nepenthoides* Wall.): Yunnan, Xizang; Nepal to Bhutan, NE India, N Myanmar, 2700 – 3600m.
58. *Arisaema odoratum* J. Murata et S. K. Wu, J. Jap. Bot. 69: 153, 1994; Yunnan. Endemic.
59. *Arisaema pangii* H. Li, Acta Bot. Yunnan. Suppl. 5: 8 – 9, 1992; Yunnan. Endemic.
60. *Arisaema parvum* N. E. Brown, Journ. Linn. Soc. Bot. 29: 320, 1893; Sichuan, Yunnan, Xizang,

3000 – 3600m. Endemic.

61. *Arisaema penicillatum* N. E. Brown, Journ. Linn. Soc. Bot. 18: 248, t. 5, 1880; Guangdong, Guangxi, Yunnan, <1000m. Endemic.
62. *Arisaema pianmaense* H. Li, Acta Bot. Yunnan. Suppl. 5: 9 – 10, 1992; W Yunnan, 2700m.
63. *Arisaema pingbianense* H. Li, Bull. Bot. Res. 8(3): 99 – 101, 1988; Yunnan. Endemic.
64. *Arisaema prazeri* Hook. f., Fl. Brit. Ind. 6: 501, 1893; Yunnan; Myanmar, 150 – 1500m.
65. *Arisaema propinquum* Schott in Oesterr. Bot. Wochenbl. 7: 333, 1856; S Xizang; Bhutan, India, Nepal, Pakistan, 2500 – 3100m.
66. *Arisaema rhizomatum* C. E. C. Fischer, Kew Bull.: 283, 1936.  
     var. *nudum* C. E. C. Fischer; Guizhou, Xizang, 1650m. Endemic.  
     var. *rhizomatum* C. E. C. Fischer; Hunan, Guangxi, Sichuan, Guizhou, Yunnan, Xizang, 650 – 3200m. Endemic.  
     var. *viride* C. E. C. Fischer; Guizhou, Xizang, 1800 – 3600m. Endemic.
67. *Arisaema rhombiforme* Buchet in Lecomte, Not. Syst. 1(12): 373, 1911; Sichuan, 2100 – 3000m. Endemic.
68. *Arisaema ringens* (Thunb.) Schott, Melet. 1: 17, 1832 (*Arum ringens* Thunb.); Jiangsu, Zhejiang, Taiwan. Endemic.
69. *Arisaema saxatile* Buchet in Lecomte, Not. Syst. 2(4): 124, 1911; Sichuan, Yunnan, 1800 – 2800m. Endemic.
70. *Arisaema serratum* (Thunb.) Schott, Melet. 1: 17, 1832 (*Arum serratum* Thunb.); Jilin, Liaoning, Zhejiang, Taiwan, Hubei, Shanxi, Sichuan; Japan, Korea, Kuril.
71. *Arisaema shimienense* H. Li, Acta Phytotax. Sin. 15(2): 108, 1977; Sichuan, 2400 – 2500m. Endemic.
72. *Arisaema sivestrii* Pamp., Nuov. Giorn. Bot. Ital. 22: 262, 1915; Hubei. Endemic.
73. *Arisaema sinii* Krause, Notizbl. Bot. Berlin 10: 1047, 1930; Hunan, Guangxi, Guizhou, Yunnan, 1000 – 2300m. Endemic.
74. *Arisaema smithii* Krause, Acta Hort. Gothob. 1: 186, 1924; Sichuan, ~2800m. Endemic.
75. *Arisaema smitinandii* S. Y. Hu, Dansk. Bot. Arkiv. 23(4): 455 – 456, 1968; SE Xizang; Thailand, 800 – 1000m.
76. *Arisaema souliei* Buchet in Lecomte, Not. Syst. 2(4): 127, 1911; Sichuan. Endemic.
77. *Arisaema speciosum* (Wall.) Mart. Flora 14: 458, 1831 (*Arum speciosum* Wall.); Yunnan, Xizang; Nepal, Bhutan, NE India, ~2400m.
78. *Arisaema taiwanense* J. Murata, Journ. Jap. Bot. 60: 353, fig. 1, 2, 1985.  
     var. *taiwanense* J. Murata; Taiwan. Endemic.  
     var. *brevipedunculatum* J. Murata; Taiwan. Endemic.
79. *Arisaema tengtsumgnense* H. Li, Acta Phytotax. Sin. 15(2): 106, pl. 9: 2(7 – 8), 1977.  
     var. *tengtsumgnense* H. Li; W Yunnan; Myanmar, 2600 – 3150m;  
     var. *pentaphyllum* H. Li, var. nov.; W Yunnan. Endemic.
80. *Arisaema thunbergii* Blume ssp. Autumnale J. C. Wang, J. Murata et Ohashi, Bot. Bull. Acad. Sin. 37: 75 – 76, 1992; Taiwan, <1000m. Endemic.
81. *Arisaema tortuosum* (Wall.) Schott, Melet. 1: 17, 1832 (*Arum tortuosum* Wall.); Sichuan, Yunnan, Xizang; Nepal, NE India, 1300 – 3900m.
82. *Arisaema undulatum* Krause in Fedde, Rep. Sp. Nov. 12: 313, 1922; Yunnan, 2100 – 2350m. Endemic.
83. *Arisaema utile* Hook. f. ex Schott, Prodr. 30, 1860; Yunnan, Xizang; N & NE India, Nepal, Bhutan, 2300 – 4000m.

84. *Arisaema vexillatum* Hara et Ohashi, Journ. Jan. Bot. 48(4): 97, 1973; Xizang; E Himalayas, E Nepal, NE India, 2700 – 3900m.
85. *Arisaema wardii* Marg. et Shaw, Journ. Linn. Soc. Bot. 48: 229, 1929; Shanxi, Qinghai, Yunnan, Xizang, 2400 – 4200m. Endemic.
86. *Arisaema wattii* Hooker f., fl. Brit. Ind. 6: 498, 1893 (*A. biauriculatum*): Yunnan, Xizang; NE India, N Myanmar, 2100 – 3300m.
87. *Arisaema wilsonii* Engl., Pflanzenr. 73(4, 23F): 212, 1920; Sichuan, Yunnan, 1900 – 3600m. Endemic.
88. *Arisaema wumengense* H. Li, Q. T. Zhang et L. S. Xie, sp. nov.: Sichuan, Yunnan. Endemic.
89. *Arisaema xiangchengense* H. Li et A. M. Li, Acta Bot. Yunnan. 5(1): 69 – 71, 1983; Sichuan, 2200 – 4400m. Endemic.
90. *Arisaema xuanweiense* H. Li sp. nov.: C Yunnan. Endemic.
91. *Arisaema yunnanense* Buchet in Lecomte, Not. Syst. 1(12): 367, 1911; Sichuan, Guizhou, Yunnan, 700 – 3200m. Endemic.
92. *Arisaema zanlanscianense* Pamp., Nuov. Giorn. Bot. Ital. 22: 262, 1915; Hubei. Endemic.
93. *Arisaema zhui* H. Li, sp. nov.: NW Yunnan, 4000m. Endemic.

#### (8) *ARUM* L.

1. *Arum korolkowii* Regel., Acta Hort. Petrop. 2: 407, 1877; Xinjiang; Iran, C Asia.

#### (9) *CALLA* L.

1. *Calla palustris* L., Sp. Pl. ed. 1: 968, 1753; Inner Mongolia, Heilongjiang, Jilin, Liaoning; N Temperate and Sub – arctic, < 1100m.

#### (10) *COLOCASIA* Schott

1. *Colocasia esculenta* (L.) Schott, Melet. 1: 18, 1832 (*Arum chinense* L.): Shandong, Jiangsu, Anhui, Zhejiang, Jiangxi, Fujian, Taiwan, Hubei, Hunan, Guangdong, Guangxi, Sichuan, Guizhou, Yunnan, Xizang; SE Asia, widely cultivated.  
     var. *antiquorum* Hubb. et Rehder; wild and widely cultivated;  
     var. *esculenta* (Nakai) Schott (*Colocasia tonoiimo* Nakai): wild and widely cultivated.
2. *Colocasia fallax* Schott in Bonpl. 7: 28, 1859; Sichuan, Yunnan; NE India, Bangladesh, N Thailand, 850 – 1400m. cultivated in tropical areas.
3. *Colocasia gigantea* (Blume) Hook. f., Fl. Brit. Ind. 6: 524, 1893 (*Caladium gigantea* Blume): Jiangsu, Anhui, Zhejiang, Jiangxi, Fujian, Guangdong, Guangxi, Sichuan, Guizhou, Yunnan; Indo – China Pen; Malay Pen.; 100 – 700m.
4. *Colocasia heterochroma* H. Li et Z. X. Wei, Acta Bot. Yunnan. 15(1): 16 – 17, 1993; SW Yunnan, 1100m. Endemic.

#### (11) *CRYPTOCORYNE* Fischer ex Wydler

1. *Cryptocoryne kwangsiensis* H. Li, Acta Phytotax. Sin. 15(2): 100, 1977; NW Guangxi. Endemic.
2. *Cryptocoryne retrospiralis* (Roxb.) Fisch. ex Wydler, Linnaea 5: 428, 1830 (*Ambrosinica retrospiralis* Roxb.): Guangdong; NE India, Myanmar, Laos, Malay Pen.
3. *Cryptocoryne sinensis* Merr., Sunyatsen. 3: 247, 1937; Guangxi, Guizhou, Yunnan. Endemic.
4. *Cryptocoryne yunnanensis* H. Li, Acta Phytotax. Sin. 15(2): 108, 1977; S Yunnan. < 700m. Endemic.

(12) *CYRTOSPERMA* Griff.

1. *Cyrtosperma merkusii* (Hasskarl) Schott in Oesterr. Bot. Wochenbl. 61, 1859 (*Lasia merkusii* Hasskarl): Guangdong; Malay Pen., Indonesia, Brunei, Polynesia, Philippines.

(13) *EPIPREMNUM* Schott

1. *Epipremnum aureum* (Linden et Andre) Bunting, Ann. Missouri 1: 28, 1964 (*Pothos aurea* Linden et Andre): Jiangsu, Fujian, Guangdong.
2. *Epipremnum formosanum* Hayata, Icon. Pl. Formos. 5: 239, fig. 85, 1915; Taiwan, 1500m. Endemic.
3. *Epipremnum pinntum* (L.) Engl. in Engl. Pf. 37 (4, 23B): 60, 1908 (*Pothos pinnata* L.): Fujian, Taiwan, Guangdong, Guangxi, Yunnan; India, SE Asia to Australia.

(14) *HAPALINE* Schott

1. *Hapaline ellipticifolium* C. Y. Wu et H. Li, Acta Phytotax. Sin. 15(2): 104, 1977; SE Yunnan, 250m. Endemic.

(15) *HOMALOMENA* Schott

1. *Homalomena hainanensis* H. Li, R. Xiao et X. L. Zeng, Acta Phytotax. Sin. 15(2): 103, 1977; Guangdong. Endemic.
2. *Homalomena kelungensis* Hayata, Icon. Pl. Formos. 8: 125, 1919; Taiwan. Endemic.
3. *Homalomena occulta* (Lour.) Schott, Melet. 1: 20, 1832 (*Calla occulta* Lour.): Guangdong, Guangxi, Yunnan; Indo - China Pen. 80 - 1100m.

(16) *IASIA* Lour.

1. *Lasia spinosa* (L.) Thwait, En. Pl. Zeyl.: 336, 1864 (*Dracontium spinosum* L.): Guangdong, Guangxi, Yunnan; NE India, Bangladesh, < 1530m.

(17) *PINELLIA* Tenore

1. *Pinellia cordata* N. E. Brown, Journ. Linn. Soc. Bot. 36: 173, 1903; Anhui, Zhejiang, Jiangxi, Fujian, Hunan, Guangdong, Guangxi, Guizhou, < 800m. Endemic.
2. *Pinellia fujianensis* H. Li, sp. nov.: Fujian. Endemic.
3. *Pinellia integrifolia* N. E. Brown in Hook. f. Icon. Pl. 19, t. 1875, 1889; Hubei, Hunan, Sichuan. Endemic.
4. *Pinellia pedatisecta* Schott in Oster. Bot. Wochenbl. 7: 341, 1857 (*P. wawrae* Engl.): Hebei, Shanghai, Shandong, Jiangsu, Anhui, Zhejiang, Fujian, Henan, Hubei, Hunan, Guangxi, Shanxi, Gansu, Sichuan, Guizhou, Yunnan, < 1000m. Endemic.
5. *Pinellia peltata* Pei, Contr. Biol. Lab. Sci. Soc. China, Bot. Ser. 10(1), fig. 1. 1935; Zhejiang, Jiangxi. Endemic.
6. *Pinellia polyphylla* S. L. Hu; Sichuan, 800m. Endemic.
7. *Pinellia ternata* (Thunb.) Breit. (*Arium ternatum* Thunb.; *Pinellia tuberifera* Tenore): Hebei, Shanxi, Liaoning, Shandong, Jiangsu, Anhui, Zhejiang, Jiangxi, Fujian, Taiwan, Henan, Hubei, Hunan, Guangdong, Guangxi, Shanxi, Ningxia, Gansu, Xinjiang, Sichuan, Guizhou, Yunnan; Korea, Japan, < 2500m.
8. *Pinellia yaoluopingensis* X. H. Gao et X. L. Liu, Acta Bot. Yunnan. 8(2): 223 - 224, 1986; Anhui. Endemic.

(18) *PISTIA* L.



1. *Pistia stratiotes* L., Sp. Pl. ed. 1: 963, 1753: Shandong, Jiangsu, Anhui, Zhejiang, Jiangxi, Fujian, Taiwan, Hubei, Hunan, Guangdong, Guangxi, Sichuan, Yunnan; tropical and subtropical areas.

(19) *POTHOIDIUM* Schott

1. *Pothoidium lobbianum* Schott in Oesterr. Bot. Wochenbl. 7: 70, 1857: Taiwan; Philippines to Sarawak.

(20) *POTHOS* L.

1. *Pothos balansae* Engl. in Engl. Bot. Jahrb. 25: 3, 1898: Guangxi; N Vietnam.
2. *Pothos cathcartii* Schott, Aroid. 1: 12, t. 44–45, 1853: Yunnan; NE India, Bhutan, Bangladesh, NE India. 500–1600m.
3. *Pothos chinensis* (Raf.) Merr. in Journ. Arn. Arb. 19: 210, 1948.  
var. *chinensis* Merr.: Taiwan, Hubei, Guangdong, Guangxi, Sichuan, Guizhou, Yunnan; Vietnam, Laos, Thailand, <2400m.  
var. *lotiensis* C. Y. Wu et H. Li, Acta Phytotax. Sin. 15(2): 101, 1977: Guizhou. Endemic.
4. *Pothos kerrii* Buchet ex Gagn. in Lecomte. Fl. Gen. Indo–Chine 6: 1084, fig. 102: 5, 1942: Guangxi; Laos, 300–500m.
5. *Pothos pilulifer* Buchet ex Gagn. in Lecomte. Fl. Gen. Indo–Chine 6: 1084, fig. 102: 4, 1942: Guangxi, Yunnan; N Vietnam, 200–1000m.
6. *Pothos repens* (Lour.) Druce in Rept. Bot. Exch. Club. Brit. Isles. 4: 641, 1917 (*Flagellaria repens* Lour.): Guangdong, Guangxi, Yunnan; N Vietnam, 20–900m.
7. *Pothos scandens* L., Sp. Fl. Ed. 1: 968, 1753: Yunnan; Bangladesh, Andamar, Sri Lanka, Indo–China Pen., Malay Pen. to Philippines, Borneo, 200–1000m.
8. *Pothos warburgii* Engl. in Engl. Bot. Jahrb. 25: 2, 1898: Taiwan. Endemic.

(21) *REMUSATIA* Schott

1. *Remusatia hookeriana* Schott in Oesterr. Bot. Wochenbl. 7: 133, 1858: Yunnan; Sri Lanka, Nepal, NE India, 2000–2200m.
2. *Remusatia pumila* (D. Don) H. Li et A. Hay, Acta Bot. Yunnan. Suppl. 5: 32, 1992 (*Caladium pumilum* D. Don, *Gonatanthus pumilus* Engl.): Yunnan; S Asia.
3. *Remusatia vivipara* (Roxb.) Schott in Oesterr. Bot. Wochenbl. 7: 133, 1858 (*Arum viviparum* Roxb.): Taiwan, Yunnan; W & E Africa, Madagascara, India, Sri Lanka, L Himalayas, Indo–China Pen., Java, N Australia, 200–400m.
4. *Remusatia yunnanensis* (H. Li et A. Hay) H. Li et A. Hay, Acta Bot. Yunnan. Suppl. 5: 32, 1992 (*Gonatanthus yunnanensis* H. Li et A. Hay): Yunnan. Endemic.

(22) *RHAPHIDOPHORA* Hassk.

1. *Rhaphidophora crassicaulis* Engl. et Krause in Engl. Pf. 37 (4, 23B): 52, 1908: Taiwan, Guangdong, Guangxi, Guizhou, Yunnan, Xizang; N Vietnam, 100–1300m.
2. *Rhaphidophora decursiva* (Roxb.) Schott in Bonpl. 5: 45, 1857 (*Pothos decursive* Roxb.): Fujian, Guangdong; NE India, Bangladesh to Sri Lanka, SE Asia to Java, 480–2200m.
3. *Rhaphidophora dulongensis* H. Li, Acta Bot. Yunnan. Suppl. 5: 7, 1992: Yunnan. Endemic.
4. *Rhaphidophora hongkongensis* Schott in Bonpl. 5: 45, 1857: Fujian, Guangdong, Yunnan; Myanmar, Thailand, Laos, Vietnam to Borneo, <900(–2000)m.
5. *Rhaphidophora hookeri* Schott in Bonpl. 5: 45, 1857: Guangdong, Yunnan; NE India, N Myanmar, Bangladesh, Thailand, Vietnam.
6. *Rhaphidophora glauca* (Wall.) Schott in Bonpl. 5: 45, 1857 (*Pothos glaucus* Wall.): Yunnan; E Hi-

malayas to Thailand, 280 – 2200m.

7. *Rhaphidophora laichauensis* Gagn. in Lecomte, Not. Syst. 9: 137, 1941; Guangdong, Guangxi, Yunnan; Vietnam, < 1500m.
8. *Rhaphidophora lancifolia* Schott in Bonpl. 5: 45, 1857; Guangxi, Sichuan, Guizhou, Yunnan; Bangladesh, NE India, 480 – 2500m.
9. *Rhaphidophora luchunensis* H. Li, Acta Phytotax. Sin. 15(2): 103, 1977; Yunnan, 1700 – 2150m. Endemic.
10. *Rhaphidophora megaphylla* H. Li, Acta Phytotax. Sin. 15(2): 102, 1977; Guangxi, Guizhou, Yunnan, 600 – 1300m. Endemic.
11. *Rhaphidophora peepla* (Roxb.) Schott in Bonpl. 5: 45, 1857 (*Pothos peepla* Roxb.); Yunnan; NE India, Indo – China Pen. to Borneo, 1800 – 2800m.
12. *Rhaphidophora perkinsiae* Engl. in Bot. Jahrb. 37: 115, 1905; Taiwan; Philippines.

(23) *SAUROMATUM* Schott

1. *Sauromatum brevipes* (Hook. f.) N. E. Brown, Gard. Chron. Ser. 3(34): 93, 1903 (*Typhonium brevipes* Hook. f.); Yunnan, Xizang; Nepal, NE India, Myanmar, 1900 – 2030m.
2. *Sauromatum venosum* (Aiton) Kunth, Enum. Pl. 33: 281, 1841 (*Arum venosum* Aiton); Xizang; Nepal, NE India, Bangladesh, 2400m.

(24) *SCHISMATOGLOTTIS* Zoll. et Mor.

1. *Schismatoglottis calyptrata* (Roxb.) Zoll. et Mor. In Syst. Verz. 83, 1854 (*Calla calyptrata* Roxb.); Guangxi; SE Asia to Pacific Is. 500 – 880m.
2. *Schismatoglottis hainanensis* H. Li, R. Xiao et X. L. Zeng, Acta Phytotax. Sin. 15(2): 103, 1977; Hainan, 140 – 190m. Endemic.

(25) *SCINDAPSUS* Schott

1. *Scindapsus maclurei* (Merr.) Merr. et Metc. in Linn. Sci. Journ. 21: 5, 1945 (*Rhaphidophora maclurei* Merr.); Guangdong; Vietnam to SE Thailand, 400 – 600m.

(26) *STEUDNERA* C. Koch

1. *Staudnera colocasiaefolia* C. Koch in Wochen. Gartn. 5: 114, 1862; Guangxi, Yunnan; Myanmar, Thailand, Laos, Vietnam, 650 – 1400m.
2. *Staudnera griffithii* Schott in Bonpl. 10: 222, 1862; Yunnan; NE India, Myanmar, 100 – 500m.

(27) *SYMPLOCARPUS* Salisb.

1. *Symplocarpus foetidus* (L.) Salisb. in Nutt. Gen. N. Amer. Pl. 1: 105, 1818 (*Dracontium foetidum* L.); Heilongjiang, Jilin; Siberia, Japan, N America, ~ 200m.

(28) *TYPHONIUM* Schott

1. *Typhonium albidinervium* C. Z. Tang et H. Li, Acta Phytotax. Sin. 15(2): 105, 1977; Guangxi, Yunnan. Endemic.
2. *Typhonium alpinum* C. Y. Wu ex H. Li, R. Xiao et X. L. Zeng. Acta Phytotax. Sin. 15(2): 104, 1977. (*Typhonium mangkanense* H. Li in C. Y. Wu); Yunnan, 3350 – 4000m. Endemic.
3. *Typhonium austro – tibeticum* H. Li in Act. Phytotax. Sin. 15(2): 104, 1977; S Xizang, 2300 – 3200m. Endemic.
4. *Typhonium blumei* Nicolson et Sivadasan, Blumea 27: 494, 1981; Fujian, Guangdong, Guangxi,

Guizhou, Hainan, Hubei, Hunan, Hongkong, Jiangxi, Sichuan, Taiwan, Yunnan, Zhejiang; Cambodia, India, Indonesia, Japan, Myanmar, Thailand, Vietnam.

5. *Typhonium calcicolum* C. Y. Wu ex H. Li, R. Xiao et X. L. Zeng, Acta Phytotax. Sin. 15(2): 104, 1977.

var. *calcicolum* H. Li; SE & NE Yunnan, 1200 – 1550m. Endemic;

var. *rugosum* H. Li, var. nov.: SE Yunnan, 800 – 1500m. Endemic.

6. *Typhonium diversifolium* Wall., Cat. N. 9833a, 1832 nom. Nud., Schott, Aroid. 1:13, 1853. (*Typhonium huegelianum* Schott, Aroid. 1:13. 1853; *Heterostalis diversifolia* Schott; *Typhonium diversifolium* var. *huegelianum* (Schott) Engl.); Sichuan, Yunnan, Xizang; Nepal, Bhutan, NE India to Myanmar, Thailand, 3300 – 3700m.

7. *Typhonium flagelliforme* (Lodd.) Blume, Rumphia 1: 134, 1837. (*Arum flagelliforme* Loddiges; *Heterostalis flagelliformis* Schott; *Typhonium cuspidatum* (Blume) Decaisne); Guangdong, Guangxi, Yunnan; NE and S India, Sri Lanka, Vietnam, S & W Malaysia through Sunda to N Queensland, Luzon, < 350m.

8. *Typhonium giganteum* Engl. in Engl., Bot. Jahrb. 4: 66, t. 1. 1883. (*Typhonium giganteum* Engl. var. *girardii*; *T. girardii* (Baroni) Engl.; *T. stoliczkae*); Hebei, Shanxi, Jilin, Liaoning, Shandong, Jiangsu, Henan, Hubei, Guangdong, Guangxi, Shanxi, Gansu, Sichuan, Xizang, < 1500m. Endemic.

9. *Typhonium hirsutum* (S. Y. Hu) J. Murata et Mayo, Kew Bull. 46(1): 129 – 131, 1991 (*Arisaema hirsutum* S. Y. Hu); S Yunnan; N Thailand.

10. *Typhonium hunanense* H. Li et Z. Q. Liu, Bull. Bot. Res. Harbin, 3(2): 155 – 158, 1983; Hunan, 120 – 130m. Endemic.

11. *Typhonium kunmingense* H. Li, Acta Phytotax. Sin. 15(2): 104, 1977.

var. *kunmingense* H. Li; Guizhou, Yunnan. Endemic;

var. *alatum* H. Li ex H. Peng et S. Z. He, Acta Bot. Yunnan. 19(1): 40, 1997; SW Guizhou; Endemic;

var. *cerebriforme* H. Li ex H. Peng et S. Z. He, Acta Bot. Yunnan. 19(1): 40, 1997; Guizhou, Yunnan. Endemic.

12. *Typhonium omeiense* (Z. Y. Zhu) H. Li (*T. hongyaense* Z. Y. Zhu), Acta Phytotax. Sin. 15(2): 10, 1977; Guangxi, Sichuan, Guizhou. Endemic.

13. *Typhonium roxburgii* Schott, Aroid. 2: t. 17, 1985; Yunnan; S India, Sri Lanka, Malaysia, Indonesia, Moluccas.

14. *Typhonium trifoliatum* Wang et Lo ex H. Li et al., Acta Phytotax. Sin. 15(2): 105, 1977; Hebei, Shanxi, Inner Mongolia, Shanxi. Endemic.

15. *Typhonium trilobatum* (L.) Schott Wien. Zeitschr. Kunst, 1829: 732, 1829 (*Arum trilobatum* L.); Guangdong, Guangxi, Yunnan, SE China; Nepal, N Malaya, Sri Lanka, SE Asia, introduced into W Africa and neotropics, < 650m.

## CONCLUSION

In the past 20 years, many species of Chinese aroids have been identified and understood carefully. Great changes in some genera including *Arisaema*, *Amorphophallus*, *Typhonium* and *Pinellia* have occurred based on recent studies (Li et Long, 1998; Li, 1998). Now there are 204 aroid species and 16 varieties recorded in China. In particular, 108 species and 10 varieties are found to be endemic to China, 53.6% ( $(108 + 10) / (204 + 16)$ ) of the total species number of Chinese aroids. China possesses very high endemism of aroids. As in other parts of the earth, the Chinese aroids are distributed mainly in tropical and subtropical areas. *Arisaema* is the biggest group of Chinese Araceae, consisting of 93 species and 10 varieties, which is 68.7% of the world's species. It was found that 64 species and 8 varieties in *Arisaema* are endemic to China. The

endemism in Chinese *Arisaema* is 69.9% ( $([64 + 8]/[93 + 10] = 69.9\%)$ ). The mountainous southwestern provinces including Yunnan, Xizang (Tibet) and Sichuan harbor a great number of *Arisaema*, especially the endemic species. Therefore, the diversity and modern distribution center of *Arisaema* is in southwestern China (Li, 1980).

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